

WELL SUMMARY

page 1 of 4Location ID: BLM-17-493 Field Representative(s): R. CooperNorthing: 227717.21 Easting: 403033.96Date Started: 1 February 1989 Date Completed: 27 February 1989Drilling Method: Mud & Air-Foam Rotary Drilling Contractor: Larjon DrillingDriller: T. CrawfordTotal Depth Borehole: 560' Total Depth Well Casing: 518.8'Total Depth Surface Casing: 75'Diameter Well Casing: 4" Diameter Surface Casing: 10"Length of Bottom Blank: 5.3'Type of Screen: 2 X 10.3' Extra Strength 0.02 slotScreen Interval: 492.8' to 513.5'Water First Detected: not detected Water Level Open Borehole: 457.3'
while drilling surface casingWater Level Cased Borehole: 464.6' well casing

Quik-Foam Use: 6 gallons

Bentonite gel (Drilling Mud): 7 bags

Estimated Water Use:	≈ 9,050	Total fluid introduced to borehole
	≈ 3,070	Total fluid in mud pit
	≈ 5,980	Introduced to formation

Well Casing:

4in x 3ft SCD 40 PVC:	-	stock SS centralizers:	0
4in x 5ft SCD 40 PVC:	-	custom SS centralizers:	1
4in x 10ft SCD 40 PVC:	-	4"x2' SS locking riser:	0
4in x 20ft SCD 40 PVC:	-	4" SS locking cap:	1
Total SCD 40 PVC pipe:	- ft	4" SS female cap:	1
4in x 3ft SCD 5 SS pipe:	0		
4in x 5ft SCD 5 SS pipe:	0	4in x 5ft SCD 10 SS pipe:	2
4in x 10ft SCD 5 SS pipe:	0	4in x 10ft SCD 10 SS pipe:	1
4in x 20ft SCD 5 SS pipe:	20	4in x 20ft SCD 10 SS pipe:	4
Total SCD 5 SS pipe:	400 ft	Total SCD 10 SS pipe:	100 ft

Well Completion:

100# bags 16/40 sand: 11 bags
100# bags 10/20 sand: 0 bags
100# bags 8/14 sand: 0 bags
100# bags 8/20 sand: 40 bags

94# bags cement: 200 bags

5 gal. buckets bentonite: 5 buckets

50# bentonite powder: 20 bags

50# Benseal: 1/2 bag

Surface Casing:

94# bags cement: 76 bags

50# bags bentonite powder: 8 bags

Pertinent Field Notes:

01/31/89 Steam-clean and mobilized to well site.

02/01/89 Drill 0'-15' with 12 1/4" bit, mud rotary with Franks rig. - Cooper

02/02/89 Drill 15'-41' with 12 1/4" bit, mud rotary with Franks rig. - Cooper

02/03/89 Drill 41'-75' with 12 1/4" bit, mud rotary with Franks rig. - Cooper

02/04/89 Ream borehole with 14 3/4" bit 0'-75', mud rotary with Franks rig. - Cooper

02/05/89 Set and grout 10" x 75' steel surface casing with ≈ 50 sacks cement and 5% bentonite mix. 76 sacks cement were mixed with 8 sacks of bentonite. - Cooper

02/06/89 Steam-clean BE rig and mobilize to site. Due to the cold weather some of the hydraulic and air valves froze and became inoperable. Drilling was cancelled for the day. - Cooper

02/07/89 Larjon brought butane heaters to thaw rig and drilling commenced. Drill 75'-235' using air-foam rotary with 9 7/8" tricone bit. No monitor filters used. - Cooper

- 02/08/89 Drill 235'-366' using air-foam rotary with 9 7/8" tricone bit. Monitored both the main and the auxiliary compressors. - Cooper
- 02/13/89 Larjon got water off-site at the Jornada Water supply well. Samples were taken for WSTF analysis. Drilled from 366'-516 with 9 7/8" tricone bit. Significant color change in drilling foam at \approx 470' from a light brown to a purplish brown color. Andesite cuttings are predominate but there are fragments of tuff similar to those found at BLM-8 and BLM-9. Water was never observed while drilling and no head was built up after setting 25 minutes at 496'. Bedrock not encountered at 516'. - Cooper
- 02/14/89 More drill pipe was brought from the Larjon yard to drill deeper. Took water level in open-borehole at 457.3'. Drilled from 516'-560' (TD). Top of bedrock is approximately 550'. Water was never seen while drilling and foam never thinned. - Cooper
- 02/15/89 Don Pearson (Southwest Surveys) logged hole with standard suite of logs plus drift log. Approximately 6' drift over 560' = 1.07% drift. Larjon prepared for completion. Bottom sand, bedrock-alluvium contact plug and filler sand to bottom plug was installed. Bottom plug not installed in case of overnight slough. - Cooper
- 02/16/89 Completion. Install bottom bentonite plug; bridged at water table; blown through with filtered air. Run Scd. 10 stainless casing below 400' and Scd. 5 stainless casing above 400'. 8/20 gravel pack installed; bailed to settle pack; 16/40 added above; upper Benseal/E-Z mud plug installed and left to sit overnight. Weather today was rainy all day and cold and miserable. - Cooper
- 02/17/89 Sound upper plug and add 3:1 ratio of 8/20, 16/40 sand to \approx 22' above static. Mixed 100 sacks cement and 10 sacks bentonite gel and poured in borehole from surface. Bailed to check for grout invasion and there was none. Grout came up 220'. - Cooper
- 02/21/89 Second load of grout was mixed; 100 sacks cement 10 sacks bentonite gel and was added from surface. Grout came to surface and 6" x 5' guard pipe was installed. - Cooper
- 02/24/89 Begin well development. See development sheet for details. - Cooper, Kaszuba
- 02/25/89 Set pump at 486'. Pump rate bracketed at \approx 3 gpm without any break in discharge output. Development parameters stabilize after 119 gal. are pumped. Well development final after 212 gal. are pumped. See development sheet for details. - Egan

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02/27/89 Completed well with 3'x3' concrete pad and brass cap set in
concrete. - Kaszuba